## Yeh, Alice

**From:** Olsen, Marian
**Sent:** Thursday, June 19, 2014 11:42 AM
**To:** Yeh, Alice
**Subject:** Additional FOIA response

{In Archive} Re: Fw: CPG HHRA Action Items Follow-up

Gary Buchanan
to:
Linda Cullen, Alice Yeh
03/31/2009 11:57 AM

Cc:
"Bruce Ruppel", Marian Olsen, Stephanie Vaughn

From: "Gary Buchanan" <Gary.Buchanan@dep.state.nj.us>

To: "Linda Cullen" <Linda.Cullen@dep.state.nj.us>, Alice Yeh/R2/USEPA/US@EPA,

Cc: "Bruce Ruppel" <Bruce.Ruppel@dep.state.nj.us>, Marian Olsen/R2/USEPA/US@EPA, Stephanie Vaughn/R2/USEPA/US@EPA
Archive: This message is being viewed in an archive.

Alice, we ran dioxins/furans, PCB congeners, co-planar PCBs, mercury, and pesticides on the hepatopancreas using the weights listed (usually 5 crabs per composite).

Crabs averaged 6.6 g per individual for hepatopancreas. I do not believe that they need such large numbers of crabs due to the effectiveness of this organ to accumulate organic compounds (i.e., less tissue mass needed per extract as compared to muscle for comparable detection limits ). They should have more than enough with 10 crabs, or at most 15.

Certainly capturing 50 crabs per station would be a large effort. I would suggest going with the smaller numbers and using smaller mass per analysis. Alternatively, you could prioritize analyses if the lab needs more tissue.

I asked Bruce to check on the SOP.

Gary

>>> <Yeh.Alice@epamail.epa.gov> 3/31/2009 11:21 AM >>>

The PRPs on the Passaic River are estimating that it will require 30-50 crabs per sampling station to get enough hepatopacreas mass required for lab analysis. I just wanted to double check that with you (or with your crab hepatopancreas sampling experts) - does that sound reasonable to you?

The difference here, of course, is that we have a long suite of analytes

(dioxin, PCBs, PAHs, metals, pesticides, etc....), while I believe NJDEP only analyzed for dioxin (although I could be wrong on this).

Any guidance you can offer would be appreciated.

Also, when we met back on 2/19, you were going to send a SOP for hepatopancreas sampling - did you have a chance to do that?

Let me know if you have any questions you'd prefer to discuss by phone (212-637-4427).

----- Forwarded by Alice Yeh/R2/USEPA/US on 03/31/2009 11:15 AM -----

Summary of Crab Tissue Data

The CPG has reviewed the available ESP crab tissue data set and site-specific regression analyses to estimate the size of various crab tissues including the hepatopancreas, muscle, and other soft tissue. It was necessary to estimate crab tissue sizes using the LPR site-specific regression equations as the actual tissue measurement data are still being retrieved. Table 2 (attached) summarizes our findings, and the following is noted:

* The estimated hepatopancreas weight of the average crab caught in the 1999-2000 ESP is 5.4 g, or about one third of the remaining soft tissue mass after muscle tissue is removed.
* Based on this regression, approximately 30-35 crabs on average would be necessary to meet the minimum sample size requirement of 175 g for hepatopancreas-only analysis. Based on the actual mass of hepatopancreas tissue removed from each crab during the ESP sampling, an average of 48 crabs was needed to meet ESP sample mass requirements.
* Accounting for dups, splits, and MS/MSD samples, it is likely more than 100 crabs would be needed per sampling station.
* The average catch per unit effort during the 1999-2000 ESP sampling was 4.29 crabs/trap, meaning that considerable additional effort will need to be expended to meet hepatopancreas-only sampling requirements.
* From an exposure perspective, a consumer of crab muscle, hepatopancreas, and the cooking liquids (e.g., in a sauce or soup) is getting exposed to contaminants in all soft tissues not just the hepatopancreas. Analysis of the soft tissue fraction that includes the hepatopancreas more accurately estimates exposure by these potential consumers.

In summary, based on these findings and information previously provided to EPA, the CPG maintains that the proposed sample design of compositing fish is reasonable and appropriate, and the analysis of hepatopancreas-only is not necessary for the RI/FS HHRA, BERA or bioaccumulation modeling.

We hope this information is helpful and look forward to our upcoming discussion.

Regards,

Betsy
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(See attached file: Table 2.xls)